

ABSTRACT

The peroxisome proliferator activated receptor alpha (PPAR α) plays a key role in mediating fatty acid metabolism by regulating expression of genes involved in fatty acid oxidation. A limitation of existing human cell models for testing PPAR α ligands is the inability to detect PPAR responsive genes with endogenous levels of PPAR α protein. The HK-2 cell line derived from human proximal tubules showed induction of several genes, including pyruvate dehydrogenase kinase 4 (PDK-4) and adipocyte differentiation related factor (ADRP) by PPAR α ligands. Induction of PDK-4 by PPAR α agonists in the HK-2 cell model closely correlates with its induction *in vivo* and thus represents a marker for PPAR α agonist action. HK2 cells also exemplify the first model of a human cell line in which PPAR α ligand dependent gene induction can be detected with endogenous levels of receptor.